

* For Examiner Reference

WE CLAIM:

1. A two-cycle engine, comprising:

a cylinder (2) in which is formed a combustion chamber (3) that is delimited by a reciprocating piston (5) that via a connecting rod (6) drives a crankshaft (7) that is rotatably mounted in a crankcase (4) wherein in predetermined positions of said piston (5) said crankcase (4) communicates with said combustion chamber (3) via transfer channels (10, 12), wherein said cylinder (2) has an outlet (9) leading out of said combustion chamber (3) wherein an intake duct (8) leads into said crankcase (4) for a supply of fuel, wherein an air duct (14) is provided for a supply of substantially fuel-free air, and wherein said air duct (14), in the vicinity of said cylinder (2), is divided into two branches (26, 27),

a connecting flange (25, 48) formed on said cylinder 2, wherein said two branches (26, 27) of said air duct (14) open out at air openings (19) of said connecting flange;

a cover (21) disposed on said connecting flange (25, 48) wherein said cover extends over said air openings (19) and

a flow divider (24) disposed or formed on said connecting flange (25, 48), wherein said flow divider projects beyond a plane (28) of said connecting flange and into said cover (21), and wherein said flow divider (24) divides an air flow in said air duct (14) to said two branches (26, 27).

2. A two-cycle engine according to claim 1, wherein said cover (21), on a side facing away from said connecting flange (25, 48), is provided with a connection (17) for said air duct (14).

5 3. A two-cycle engine according to claim 2, wherein said flow divider (24) is disposed in a projection surface of said air duct connection (17) toward said plane (28) of said connecting flange (25, 48).

10 4. A two-cycle engine according to claim 2, wherein said air duct connection (17) is offset toward said combustion chamber (3) relative to at least one of said air openings (19) in a direction of a longitudinal axis (29) of said cylinder (2).

5. A two-cycle engine according to claim 4, wherein said air duct connection (17) is offset relative to both of said air openings of said connecting flange (25, 48).

15 6. A two-cycle engine according to claim 1, wherein said flow divider (24) forms a guide for said cover (21).

7. A two-cycle engine according to claim 1, wherein said plane (28) of said connecting flange (25, 48) forms a wall portion of said air duct (14).

20 8. A two-cycle engine according to claim 1, wherein said connecting flange (48) has a recess that forms a wall portion of said air duct (14).

9. A two-cycle engine according to claim 2, wherein said intake duct (8) opens out at said connecting flange (25, 48) at an intake opening (20) over which extends said cover (21) and wherein on a side

that faces away from said connecting flange (25, 48) said cover is provided with a connection (18) for said intake duct (8).

5 10. A two-cycle engine according to claim 9, wherein said air duct connection (17) and said intake duct connection (18) are oriented relative to one another in said cover (21) approximately in a direction toward a longitudinal axis (29) of said cylinder (2) and wherein said air duct connection (17) is disposed on a side of said intake duct connection (18) that faces said combustion chamber (3).

10 11. A two-cycle engine according to claim 9, wherein when viewed in a circumferential direction of said cylinder (2) said air openings (19) are disposed on opposite sides of said intake openings (20) of said intake duct (8).

15 12. A two-cycle engine according to claim 9, wherein a lower edge (30) of said air openings (19) on said connecting flange (25) are offset relative to an upper edge (31) of said intake opening (20) in a direction toward said crankcase (4).

13. A two-cycle engine according to claim 1, wherein said cover (21) is provided with at least one shoulder (43) that projects into an opening (19, 20) in said connecting flange (25).

20 14. A two-cycle engine according to claim 1, wherein said cover (21) is screwed onto said connecting flange of said cylinder (2) or is connected to said connecting flange via welding, soldering, or bonding.

15. A two-cycle engine according to claim 1, wherein in pre-determined positions of said piston (5) each of said branches (26, 27) of

said air duct (14) is connected via a piston window (16) with at least one of said transfer channels (10,12).